PATENT SPECIFICATION (11) 1 468 323

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(21) Application No. 16169/75 (22) Filed 18 April 1975
(61) Patent of addition to No. 1389980 dated 16 April 1973
(31) Convention Application No. 561775
(32) Filed 25 March 1975 in
(33) United States of America (US)
(44) Complete Specification published 23 March 1977
(51) INT CL² B60Q 1/38 A42B 3/02 B60Q 1/44
(52) Index at acceptance
G4Q 1A1 4E 4FY 4G2 4H1
A3V 11D
F4R 203 232 23Y 242 244 25X 26X 271 27Y 29X 321 341 348 34X 34Y 412 469 470 473 474 475 47Y 53Y 663 672 683 713

(19)

(54) SIGNALS ON VEHICLE DRIVERS HEADGEAR

(71) We, EDWARD HAROLD ZINER, 5001 Windom Rd, at Kenilworth, Bladensburg, Maryland 20710, United States of America, and, RALPH WILLIAM SOUDER, JR., 4608 Marie Street, Beltsville, Maryland 20705, United States of America, both citizens of the United States of America, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to signals on vehicle driver's headgear such as crash helmets commonly used by motorcyclists.

The applicants have experienced several near accidents when a motorcyclist appeared suddenly in their headlight beam without any previous warning, because his unlighted helmet blended in with the surrounding traffic so that his presence in the vicinity was not detected until he swerved into their path, not until after which his unlighted helmet and the motorcycle with its low signal lights first became visible. It became clearly evident that the light-coloured helmets provided no better visibility than the darker ones at night.

In determining to do something to overcome these driving hazards, the idea of placing the turn and stop signal lights on the driver's crash helmet came to mind. This would improve the visibility of the lights by their relocation to a more elevated and open position, and the visibility of the crash helmet itself would also be effectively improved. In the prior art some headgear was found with signal and warning lights for pedestrians, such as hunters, sportsmen, workmen, firemen etc., but no motorcyclists' protective helmets with any type of reflective or turn signal, tail or stop lights, showing how to make the control means operative by the driver.

According to the present invention there is provided in combination, a vehicle driver's headgear having turn and stop signal devices with a receiver and complete receiver controlled circuits mounted on said headgear and a transmitter arranged to be mounted on the vehicle and operated by the driver for sending signals to the receiver for controlling lights on the headgear in accordance with the operation by the driver of the vehicle of the respective turn indicator switch means and brakes of the vehicle.

The invention will now be described by way of example only with particular reference to the accompanying drawings wherein:—

Figure I shows one specific form of the helmet having signal lights with receiver operated power and control circuits for use with a motorcycle having a conventional turn signal, tail and stop light system provided with a transmitter;

Figure II is a sectional view taken on the line II—II in Figure I;

Figure III shows a curved box lens with signal lights and receiver operated control circuits therein for attachment to a conventional crash helmet;

Figure IV is a sectional view taken on the line IV—IV in Figure III; and

Figure V shows a transmitter mounted on the motorcycle fuel tank shield and the complete wiring diagram for the signal light system.

The crash helmet 70 is of the common type now extensively used by motorcyclists. The helmet is equipped with turn signal lights 26 at the sides having protruding streamlined coloured lenses 42 with mounting bases 25 glued at 46 to the helmet over the light circuits thereon, and a stop signal light 28 at the rear having a similarly

mounted red lens 44 over the stop light circuits.

The lenses 42 and 44 for the lights 26 and 28 respectively may be made of transparent plastics material having a red reflective surface for easy visibility by traffic approaching from any direction around the motorcyclist. The turn light lenses 42 may have amber coloured portions which may be clear, and the stop light lens 44 may have a clear red portion in it, so that brighter signalling may be assured1

The continuous channel lens box 56 of the reflective type shown in Figures III and IV may be used in place of the individual lenses, to provide a larger area of reflective surface all around the rear and sides of the helmet, and so that it may be visible from any direction around the motorcycle or other vehicle. This channel lens 56 has sides with outer edges which are curved for glueing to the convex surface of a conventional helmet so that this continuous channel lens can be used in place of the individual lenses 42 and 44. Resilient strips 43 having hooks for hooking over the edging 52 of the helmet may be used to provide a releasable attachment for the channel lens in place of glueing it to the surface of the helmet. Reinforcing ribs 62 are provided for greater strength and to provide partitions between the three light compartments.

The channel lens strip 56 may be made large enough to house a complete signal light system, including the lights, battery and receiver controlled switch circuits for operation by an electronic transmitter on the vehicle, all arranged within the channel space of the strip, thus forming a complete self-contained signal light system with a reflective surface, for mounting around the rear of any conventional crash helmet by simply providing it with attaching clips.

In Figures II and IV, the light bulbs 28 and 26 and other circuit elements are shown mounted in the respective circuit compartments.

The helmet shown has a complete signal light and control system for use on any vehicles whether they are originally provided with signal lights of their own or not. It could be used in addition to any system already on the vehicle.

In the system shown in Figure II, the components are housed within the space 40 between a layer of electrically insulating material 48 and the lens spaces 42, 44 in which the corresponding light bulbs 26, 28 in the helmet are mounted. Double-filament bulb 28 is connected via switch 36 to the contacts of switch 22, controlled by a servomotor 16 in accordance with signals received from receiver 14 which receives signals via antennae 12 from transmitter 10 (see Figure V) which is operated via switches 30, 32, 34 from the turn direction indicator switches and the brakes in response to operation thereof by the driver of the vehicle. A battery 18 may be mounted in a convenient place on the helmet to provide the power to the light control circuits through wiring harness 38, and to the receiver 14 via switch 36a.

The transmitter 10 may conveniently be mounted, when the vehicle is a motorcycle, on the fuel tank shield 58 by glue 46.

A flasher 24 is connected to the filament of each of the bulbs 26 via a resistor 20, to cause the bulbs to operate intermittently, when switched on.

Bulb 28 is provided with a double filament, having a large filament for the stop signal indication in response to application of the brakes of the vehicle, and a small filament for the normal tail light indication.

WHAT WE CLAIM IS:—

1. In combination, a vehicle driver's headgear having turn and stop signal devices with a receiver and complete receiver controlled circuits mounted on said headgear and a transmitter arranged to be mounted on the vehicle and operated by the driver for sending signals to the receiver for controlling lights on the headgear in accordance with the operation by the driver of the vehicle of the respective turn indicator switch means and brakes of the vehicle.

2. The combination as claimed in Claim 1, wherein said headgear is a crash helmet.

3. The combination as claimed in Claim 2, wherein said signal devices include lighting means mounted on the sides and back of the helmet and having respectively orange and red coloured lenses for the turn and stop signals, the lighting means including light bulbs mounted behind said lenses.

4. The combination claimed in Claim 3, wherein said helmet lights and their power and control circuits are housed behind said lenses.

5. The combination as claimed in Claim 4, wherein said vehicle is a motorcycle, and said transmitter is arranged to be mounted on the motorcycle fuel tank shield.

6. A combination of a vehicle driver's headgear and a transmitter substantially as herein described with reference to, and as shown in the accompanying drawings.

7. A combination as claimed in Claim 1, including headgear substantially as herein described with reference to, and as shown in Figures I and II of the accompanying drawings.

8. A combination as claimed in Claim 1 including a turn and stop signal unit substantially as herein described with reference to, and as shown in, Figures III to V of the accompanying drawings.

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Printed for Her Majesty's Stationery Office, by the Courier Press, Leamington Spa, 1977
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

1468323 COMPLETE SPECIFICATION
4 SHEETS *This drawing is a reproduction of the Original on a reduced scale*
Sheet 1

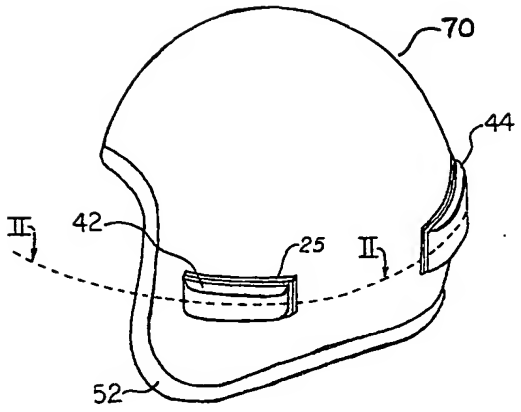

FIG.I

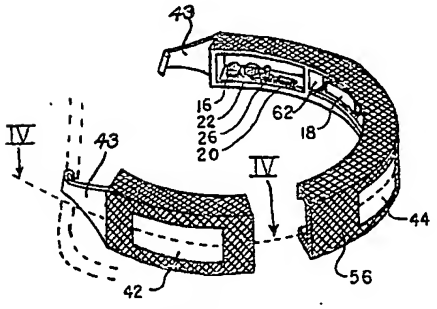

FIG.III

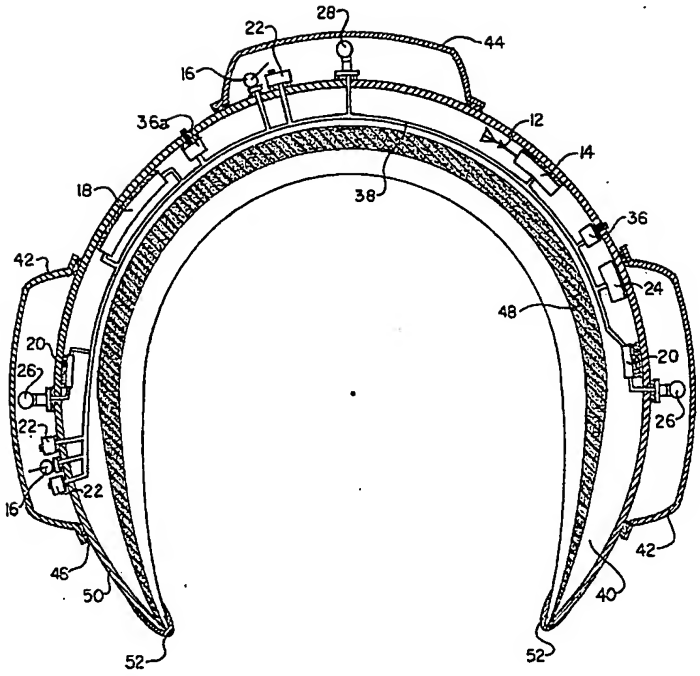
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FIG.II

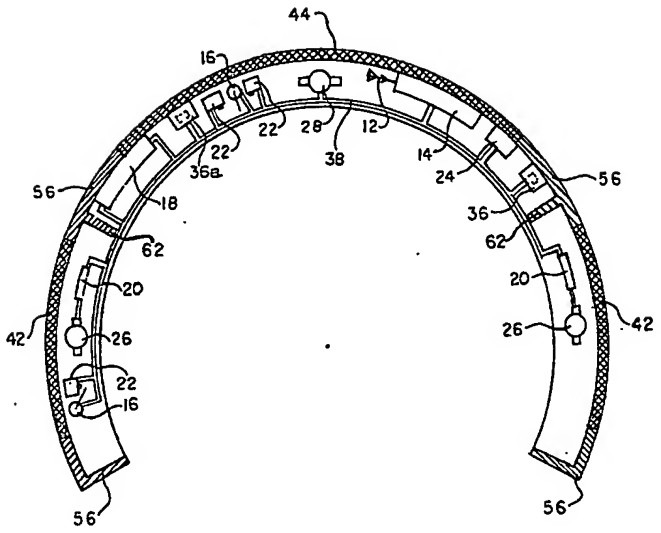
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FIG. IV

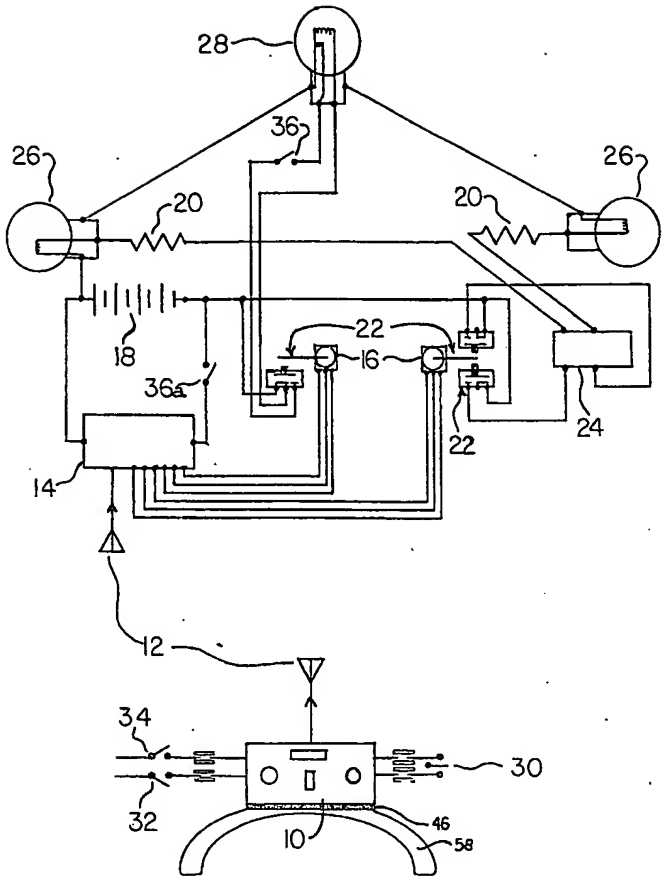

FIG. V.